How to add a language in TuberXpert

Release 1.0

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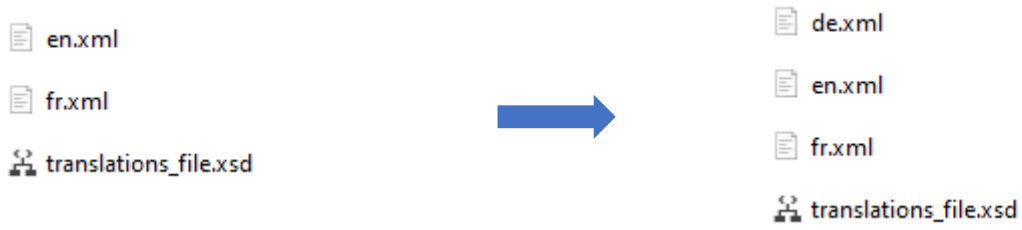
1) Get the ISO 639-1 code[1] of the language to add

For example, if you try to add German, the corresponding code is "de".

2) Duplicate an existing translations file and rename it with the previous code

Go in *"dev/tucuxi-tuberxpert/language"*, copy one of the files and rename it *"de.xml"*.



3) Open the new file and change all translations to the new language

For example, with the *"maximum_dosage_warning"* translation.

```
<translation key="maximum_dosage_warning">
   Maximum recommended dosage reached
</translation>
```

```
<translation key="maximum_dosage_warning">
   Die empfohlene Höchstdosis ist erreicht
</translation>
```

4) Add the ISO code in the XSD of the query for the xpertRequest element

In "*dev/tucuxi-tuberxpert/xml/query/tuberxpert_computing_query.xsd*".

```
<xs:complexType name="xpertRequestType">
[…]
```

```
<xs:element name="language">
 <xs:simpleType>
  <xs:restriction
        base="xs:string">
   <xs:enumeration value="en" />
   <xs:enumeration value="fr" />
  </xs:restriction>
 </xs:simpleType>
</xs:element>
```

```
xs:element name="language">
 <xs:simpleType>
  <xs:restriction
        base="xs:string">
   <xs:enumeration value="en" />
   <xs:enumeration value="fr" />
   <xs:enumeration value="de" />
  </xs:restriction>
 </xs:simpleType>
</xs:element>
```

[1] https://www.loc.gov/standards/iso639-2/php/code_list.php

5) Add the ISO code in the XSD of the query for the report language element

In *"dev/tucuxi-tuberxpert/xml/response/tuberxpert_computing_response.xsd"*.

```
<xs:element name="tuberxpertResult">
[…]
```

```
<xs:element name="language">
 <xs:simpleType>
  <xs:restriction
        base="xs:string">
   <xs:enumeration value="en" />
   <xs:enumeration value="fr" />
  </xs:restriction>
 </xs:simpleType>
</xs:element>
```

```
xs:element name="language">
 <xs:simpleType>
  <xs:restriction
        base="xs:string">
   <xs:enumeration value="en" />
   <xs:enumeration value="fr" />
   <xs:enumeration value="de" />
  </xs:restriction>
 </xs:simpleType>
</xs:element>
```

6) Add the language in the language enumeration

In the TuberXpert Qt project, go in *"tuberxpert/query/xpertquerydata.h"*.

```
enum class OutputLang
{
    ENGLISH = 0,
    FRENCH
};
```

```
enum class OutputLang
{
    ENGLISH = 0,
    FRENCH
    DEUTSCH
};
```

7) Update the TuberXpert query importer

In the TuberXpert Qt project, go in *"tuberxpert/query/xpertqueryimport.cpp"*.

In XpertQueryImport::**createXpertRequesData**

```
if (languageStr == "en") {
    language = OutputLang::ENGLISH;
} else if (languageStr == "fr") {
    language = OutputLang::FRENCH;
} else {
    setStatus(Status::Error, "Unknown output language");
}
```

```
if (languageStr == "en") {
    language = OutputLang::ENGLISH;
} else if (languageStr == "fr") {
    language = OutputLang::FRENCH;
} else if (languageStr == "de") {
    language = OutputLang::DEUTSCH;
} else {
    setStatus(Status::Error, "Unknown output language");
}
```

8) Update the TuberXpert conversion utility method

In the TuberXpert Qt project, go in *"tuberxpert/utils/xpertutils.cpp"*.

In **outputLangToString**

```
switch (_lang) {
    case OutputLang::ENGLISH : return "en";
    case OutputLang::FRENCH  : return "fr";
    default : throw LanguageException("Unknown language");
}
```

```
switch (_lang) {
    case OutputLang::ENGLISH : return "en";
    case OutputLang::FRENCH  : return "fr";
    case OutputLang::DEUTSCH : return "de";
    default : throw LanguageException("Unknown language");
}
```

9) Update the TuberXpert utility test

In the TuberXpert Qt test project, go in *"sources/tests/test_xpertutils.cpp"*.

In:

TestXpertUtils::**outputLangToString_behavesCorrectly_withAllOutputLangAndUnsupportedValues**

Add the line:

```
fructose_assert_eq(Xpert::outputLangToString(Xpert::OutputLang::DEUTSCH), "de");
```

For the language to be effectively used, the drug models must support it. Thus, they must at least provide German translations for the covariate names, covariate descriptions, and the covariate validation warning messages.